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CENTRAL FAX CENTER
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In the Claims:

Kindly amend the claims as follows:

Claims 1-177 (cancelled).

178. (Currently amended) Apparatus of claim 208, further comprising equipment adapted for performing mediated electrochemical oxidation (MEO) processes for:

(1) destruction of: a) nearly all organic solid, liquid, and gaseous materials, except fluorinated hydrocarbons; b) all biological solid, liquid, and gaseous materials; c) all inorganic solid, liquid, and gaseous materials, where higher oxidation states exist for at least one element in those compounds; and d) combined materials (e.g. a mixture of any of the foregoing with each other); henceforth collectively referred to as materials;

(2) sterilization/disinfection: a) by destroying all infectious materials; b) by sterilizing of equipment, glassware, etc of infectious materials;

(3) dissolution of transuranic/actinide material and/or destruction of the oxidizable components in the hazardous waste portion of mixed waste;

(4) generation of hydrogen from the cathodic reduction of hydrogen and/or hydronium ions; and

(5) alteration of organic, biological, and inorganic materials by MEO to produce other compounds; comprising an electrochemical cell, an aqueous electrolyte disposed in the electrochemical cell, a semi permeable membrane, ion selective membrane, microporous polymer, porous ceramic or glass frit membrane disposed in the electrochemical cell for separating the cell into anolyte and catholyte chambers and separating the electrolyte into aqueous anolyte and catholyte portions, electrodes further comprising an anode and a

cathode disposed in the electrochemical cell respectively in the anolyte and catholyte chambers and in the anolyte and catholyte portions of the electrolyte; a power supply connected to the anode and the cathode for applying a direct current voltage between the anolyte and the catholyte portions of the electrolyte; and treating and oxidizing the aforementioned materials in the anolyte portion with a mediated electrochemical oxidation (MEO) process, wherein the anolyte portion further comprises oxidizing species as a mediator in aqueous solution and the electrolyte is an acid, neutral or alkaline aqueous solution, and wherein the mediator oxidizing species are simple anion redox couples described in Table I as below; Type I isopolyanions complex anion redox couples formed by incorporation of Mo, W, V, Nb, Ta, or mixtures thereof as addenda atoms; Type I heteropolyanions complex anion redox couples formed by incorporation into Type I isopolyanions as heteroatoms any of the elements listed in Table II either singly or in combination thereof, or heteropolyanions complex anion redox couples containing at least one heteroatom type element contained in both Table I and Table II below or combinations of the mediator oxidizing species from any or all of these generic groups:

I.

Table I: Simple Anion Redox Couples

GROUP	SUB- GROUP	ELEMENT	VALENCE	SPECIES	SPECIFIC REDOX COUPLES
I	A	None			
	B	Copper (Cu)	+2	Cu ⁺² (cupric) H ₂ CuO ₂ (bicuprite) CuO ₂ ⁻² (cuprite)	+2 Species/ +3, +4 Species; +3 Species/ +4 Species
			+3	Cu ⁺³ CuO ₂ ⁻ (cuprate) Cu ₂ O ₃ (sesquioxide)	
			+4	CuO ₂ (peroxide)	
		Silver (Ag)	+1	Ag ⁺ (argentous) AgO ⁻ (argentite)	+1 Species/ +2, +3 Species; +2 Species/ +3 Species
			+2	Ag ⁺² (argentic) AgO (argentic oxide)	
			+3	AgO ⁺ (argetyl) Ag ₂ O ₃ (sesquioxide)	
		Gold (Au)	+1	Au ⁺ (aurous)	+1 Species/ +3, +4 Species; + 3 Species/ +4 Species
			+3	Au ⁺³ (auric) AuO ⁻ (auryl) H ₃ AuO ₃ ⁻ (auric acid) H ₂ AuO ₃ ⁻ (monoaurate) HAuO ₃ ⁻² (diaurate) AuO ₃ ⁻³ (triaurate) Au ₂ O ₃ (auric oxide) Au(OH) ₃ (auric hydroxide)	
			+4	AuO ₂ (peroxide)	
II	A	Magnesium (Mg)	+2	Mg ⁺² (magnesium)	+2 Species/ +4 Species
			+4	MgO ₂ (peroxide)	
		Calcium (Ca)	+2	Ca ⁺²	+2 Species/ +4 Species
			+4	CaO ₂ (peroxide)	
		Strontium	+2	Sr ⁺²	+2 Species/ +4 Species
			+4	SrO ₂ (peroxide)	
		Barium (Ba)	+2	Ba ⁺²	+2 Species/ +4 Species
			+4	BaO ₂ (peroxide)	

GROUP	SUBGROUP	SYMBOL	VALENCY	SPECIES	EXPLICIT REDOX COUPLER
II	B	Zinc (Zn)	+2	Zn ⁺² (zincic) ZnOH ⁺ (zincyl)	+2 Species/ +4 Species